

### **REMARKS**

This application has been carefully considered in connection with the Office Action dated January 4, 2007. Reconsideration and allowance are respectfully requested in view of the following.

#### **Summary of Rejections**

Claims 1-29 were pending at the time of the Office Action.

Claims 1-26 were rejected under 35 USC § 103(a) as being unpatentable over “*Mid-Tier Caching: The TimesTen Approach*” (hereinafter “*TimesTen*”) in view of *Coram, et al.* (U.S. Patent Application Publication No. 2002/0107835, hereinafter “*Coram*”).

Claims 27-29 were rejected under 35 USC § 103(a) as being unpatentable over “*Mid-Tier Caching: The TimesTen Approach*” (hereinafter “*TimesTen*”) in view of *Coram*, further in view of *Ricketts, et al.* (U.S. Patent No. 6,901,383, hereinafter “*Ricketts*”).

#### **Summary of Response**

Claims 1-29 remain as originally submitted or previously presented.

Remarks and Arguments are provided below.

#### **Summary of Claims Pending**

Claims 1-29 are currently pending following this response.

With regard to the art rejections, the Office Action has cited *Coram* as teaching an engine that monitors an in-memory database system and applies a cache management rule, which is provided by an application utilizing the data, to the cached data without the involvement of the application or the in-memory database system.” However, *Coram* teaches result set caching that includes receiving an informational database request and determining whether a result set is stored in cache. This determination is based at least in part on the cache-worthiness of the result set. *Coram* does not teach or suggest allowing the application that is utilizing the data to determine how the data will be cached. Accordingly, *Coram* does not address the problems that arise when applying application-specific cache management rules to cached data. The present disclosure addresses and solves this very problem. This distinction will be discussed in greater detail in the analysis of the present claims that follows.

### **Rejections under Section 103**

Claims 1-26 were rejected under 35 USC § 103(a) as being anticipated by “*Mid-Tier Caching: The TimesTen Approach*” (hereinafter “*TimesTen*”) in view of *Coram, et al.* (U.S. Patent Application Publication No. 2002/0107835, hereinafter “*Coram*”).

*Coram* does not teach or suggest applying application-specific cache management rules to the cache data.

Applicant respectfully submits that the prior art of record does not establish a *prima facie* case of obviousness as to the pending claims because the cited prior art fails to teach or suggest all of the claim limitations. Specifically, Claim 1 recites, “an engine operable to monitor the in-memory database system and apply the rule to the cached data; wherein the engine monitors the

in-memory database system and applies the rule to the cached data without the involvement of the application or the in-memory database system.” The rule recited in this element refers to the second element of Claim 1 which reads, “an application utilizing data and having a rule related to caching the data.” The Office Action correctly noted that *TimesTen* does not disclose such an engine. The Office Action appears to suggest that the RS cache 106 of *Coram* manages cached data by applying a cache management rule that is provided by the application utilizing the data. However, *Coram* does not teach or suggest allowing the application that is utilizing the data to determine how that data will be maintained in cache. RS cache 106 manages all of the cached data in the same manner, regardless of the application that is utilizing the data. In the case of *Coram*, utilizing application 102 shown in Figures 1, 3, 5, 6, and 7 of *Coram* does not have any control over how RS cache 106 manages the cached data.

By contrast, the present disclosure teaches applying application-specific cache management rules to cached data through the use of a wrapper and a rules engine. In one embodiment, the present disclosure teaches a wrapper that is in communication with an application. In this manner, the application is able to pass data and any rules associated with the cache management requirements of the data utilized by the application to the wrapper. The IMDBMS of the present disclosure contains a rules event table whose entries include a rule type or rule event and a reference to the data associated with the rule type, such as a pointer. The rule type identifies a rule definition which fully describes the function to be applied to the data. The rule event or type entry is provided by the wrapper when a data item is first entered into the cache. In this embodiment, a rule engine is operable to periodically poll or query, based on the rules, the IMBDMs. In this manner, the rule engine identifies cached data with the associated rule type. After identifying the cached data and the rule type, the rule engine applies the rule to

the related data, thereby implementing the application specific rule outside of the IMDBMS.

It can be seen that this functionality provides implementation of application-specific rules without the inefficiencies associated with these rules being implemented by the application itself. In addition, this embodiment provides cache management of data functionality not provided by the IMDBMS, which promotes greater efficiency throughout the system. Such functionality and advantage are not taught or realized by *Coram*.

Therefore, Applicant respectfully submits that none of the cited art, singly or any motivated combinations thereof, teaches or suggests an engine operable to monitor the in-memory database system and apply the rule to the cached data; wherein the engine monitors the in-memory database system and applies the rule to the cached data without the involvement of the application or the in-memory database system. Accordingly, for the reasons established above, Applicant respectfully submits that Claim 1 is not obvious in view of the cited references and respectfully requests allowance of this claim.

Similarly, independent Claim 14 recites, “an engine operable to monitor the in-memory database system and apply the rule to the cached data; wherein the engine monitors the in-memory database system and applies the rule to the cached data without the involvement of the application or the in-memory database management system.”

Therefore, for the reasons established above, Applicant respectfully submits that Claim 14 is not obvious in view of the cited references and respectfully requests allowance of this claim.

Independent Claim 20 recites, “applying the rule to the data based on the rule component; wherein the application of the rule to the data occurs without the involvement of the application or the in-memory database server.”

For the reasons established above, Applicant respectfully submits that Claim 20 is not obvious in view of the cited references and respectfully requests allowance of this claim.

Independent Claim 24 recites, “an engine operable to receive at least the component of the rule from the wrapper and apply the rule to cached data; wherein the engine applies the rule to the cached data without the involvement of the application or the in-memory database management system.”

For the reasons established above, Applicant respectfully submits that Claim 24 is not obvious in view of the cited references and respectfully requests allowance of this claim.

Dependent Claims 2-13, 15-19, 21-23, 25, and 26 depend directly or indirectly from independent Claims 1, 14, 20, and 24 and incorporate all of the limitations thereof. Accordingly, for the reasons established above, Applicant respectfully submits that Claims 2-13, 15-19, 21-23, 25, and 26 are not obvious in view of the cited references and respectfully requests allowance of these claims.

Claims 27-29 were rejected under 35 USC § 103(a) as being unpatentable over “*Mid-Tier Caching: The TimesTen Approach*” (hereinafter “*TimesTen*”) in view of *Coram*, further in view of *Ricketts, et al.* (U.S. Patent No. 6,901,383, hereinafter “*Ricketts*”).

Dependent Claims 27-29 depend directly or indirectly from independent Claim 24 and incorporate all of the limitations thereof. Accordingly, for the reasons established above, Applicant respectfully submits that Claims 27-29 are not obvious in view of the cited references and respectfully requests allowance of these claims.

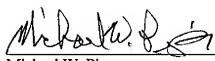
**Conclusion**

If the Examiner has any questions or comments or otherwise feels it would be helpful in expediting the application, he is encouraged to telephone the undersigned at (972) 731-2288.

The Commissioner is hereby authorized to charge payment of any further fees associated with any of the foregoing papers submitted herewith, or to credit any overpayment thereof, to Deposit Account No. 21-0765, Sprint.

Respectfully submitted,

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